

TURBULENT FLAME PROPAGATION
IN DROP SUSPENSION

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A new mathematical model of turbulent flame propagation in drop suspension has been developed. The model is based on one-dimensional set of partial differential equations governing the gaseous flame, on the one hand, and transient drop combustion in a uniform monodispersed suspension, on the other hand, and applies the formalism of the presumed probability density function of temperature. Chemical transformation is modeled by a multistep overall reaction mechanism of hydrocarbon fuel oxidation. The model has been validated against available experimental data for suspensions of *iso*-octane drops of different initial size.